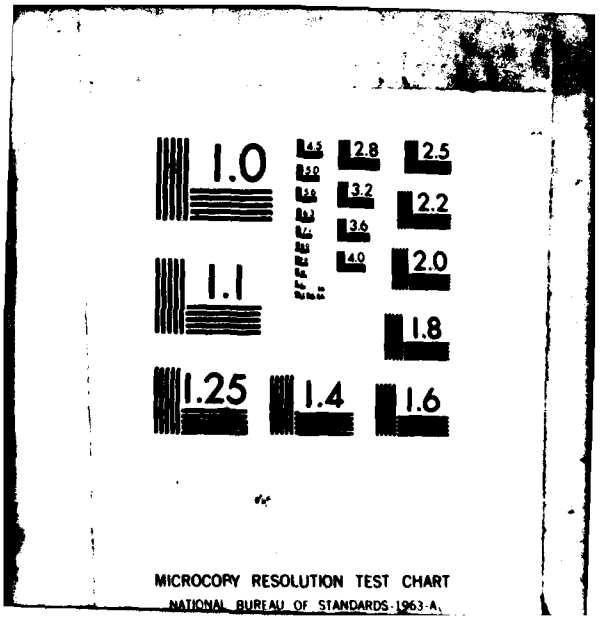
AD-A110 549 GENERAL ACCOUNTING OFFICE WASHINGTON DC PROCUREMENT --ETC F/G 5/1
THE DEPARTMENT OF ENERGY SHOULD EXERCISE MORE OVERSIGHT OF MAIN--ETC(U)
FEB 82
UNCLASSIFIED GAO/PLRD-82-33 NL

END
DATE FILMED
3-82
DTIC


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

(2)

PROCUREMENT, LOGISTICS, AND READINESS DIVISION

LEVEL II

B-203841

FEBRUARY 3, 1982

(12) 10

The Honorable James B. Edwards
The Secretary of Energy

Dear Mr. Secretary:

Subject: The Department of Energy Should Exercise More Oversight of Maintenance and Repairs of Its Multiprogram Laboratories (PLRD-82-33)

GAO

We have assessed the Department of Energy's (DOE's) oversight controls to ensure that needed real property maintenance and repair are being accomplished at the multiprogram laboratories and to ensure that Government real property is protected adequately. We performed work at contractor and DOE headquarters and DOE operations offices for four of the multiprogram laboratories--Los Alamos National Scientific Laboratory, Los Alamos, New Mexico; Sandia National Laboratories, Albuquerque, New Mexico; Argonne National Laboratory, Argonne, Illinois; and Lawrence Berkeley Laboratory, Berkeley, California. The details of our findings are contained in the enclosure.

In summary we found that:

--Although DOE headquarters has assigned responsibility for overseeing the day-to-day management of its laboratories to field or operations offices located near the laboratories, it has provided little guidance on how they should control their maintenance and repair work. In addition, headquarters was not regularly monitoring the performance of the operations offices or obtaining and comparing the costs incurred by contractors among different operations offices.

--Operations offices generally were not adequately reviewing contractors' proposed budgets for maintenance and repairs or monitoring the condition of all real property. They did encourage, but did not

(945443)

412430

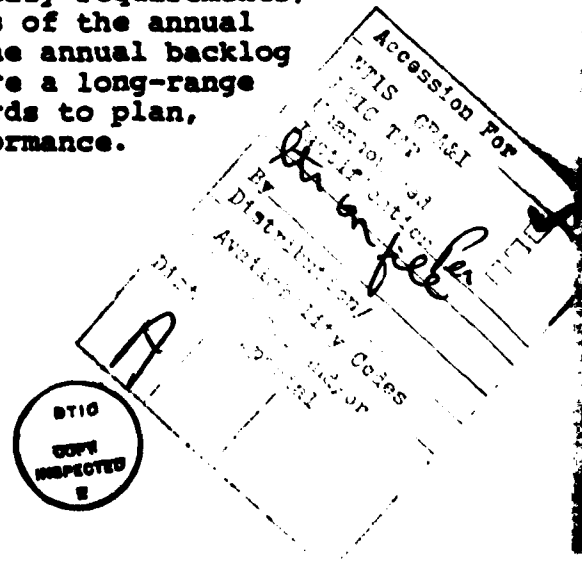
require, contractors to use proven management techniques, such as annual facility inspections, annual and long-range work plans, and backlogs of deferred work, to manage maintenance and repairs. Only one internal audit regarding maintenance and repair has been made by an operations office in recent years.

--Some laboratory facilities were in obvious need of repair, but the true condition of others was unknown to DOE management because of inadequate monitoring. According to DOE officials, millions of dollars of laboratory rehabilitation work that is now needed might have been prevented had maintenance and repairs been properly performed in the past.

After we had started our review, DOE headquarters officials began drafting an order, DOE Order 4320, on facility maintenance management. When we discussed our tentative findings with these officials in March 1981, we were provided a draft of DOE Order 4320. However, as of December 1981, the order had not been issued. In our opinion, issuance of the draft order would have provided for the needed oversight controls.

The draft order required operations offices to review and approve annual maintenance and repair budgets and annual and long-range work plans for all DOE-owned, contractor-operated sites under their jurisdiction; review and validate the backlog of deferred maintenance and repairs and plans for its reduction; and monitor, evaluate, and report on contractors' performance of maintenance and repair work. The draft order also called for headquarters to develop maintenance and repair guidance handbooks, review and analyze operations offices' maintenance management, analyze the condition of real property facilities each year, and maintain files on annual and long-range work plans and listings of deferred maintenance and repair projects.

The draft order also required that each DOE operating contractor establish a formal maintenance management program; make periodic facility inspections to identify requirements; prepare an annual work plan to be the basis of the annual maintenance and repair budget; determine the annual backlog of unfunded maintenance and repairs; prepare a long-range work plan; and use work performance standards to plan, estimate, review, and evaluate worker performance.



We believe that DOE should exercise more effective oversight of maintenance and repairs at the multiprogram laboratories. DOE headquarters should provide its operations offices the guidance needed to channel their efforts in the right direction and to ensure that uniform results are achieved throughout the laboratories. Further, the operations offices need to require the operating contractors to better discharge their responsibilities in maintaining and repairing valuable Federal assets.

In view of the seriousness of the problems noted during our review and the delay in issuing the order strengthening controls in this area, we recommend that you direct the immediate issuance of the order on facility maintenance management and take steps to ensure that the provisions of the order are carried out.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Chairmen, House Committees on Appropriations, on Government Operations, and on Interstate and Foreign Commerce, Subcommittee on Energy and Power; Senate Committees on Appropriations, on Governmental Affairs, and on Energy and Natural Resources; and the Director, Office of Management and Budget. Copies are also being sent to the operating contractors of the four laboratories.

Sincerely yours,

Donald J. Horan

Donald J. Horan
Director

Enclosure

DOE OVERSIGHT OF MAINTENANCE AND REPAIRS AT ITS MULTIPROGRAM LABORATORIES

DOE PAYS INSUFFICIENT ATTENTION TO LABORATORY MAINTENANCE AND REPAIRS

The large public investment in the contractor-operated multiprogram laboratories obligates DOE to exercise stringent oversight controls to ensure that Government property is protected properly and that maintenance and repairs are carried out effectively and efficiently. However, DOE exercises little oversight control with respect to maintenance and repairs of its laboratory property. As a result, DOE does not know if annual levels of maintenance and repairs are adequate nor how productively contractors use funds devoted to maintenance and repairs.

Operations offices are responsible for maintenance and repairs

DOE operations offices have general responsibility for overseeing the day-to-day management of contractor-operated multiprogram laboratories. However, DOE headquarters has not issued the operations offices a management directive on facility maintenance. DOE has provided informal guidance to the field through an interim directive, which is undated and has not been approved, entitled Maintenance of Property. It contains an objective that staff, materials, and funds for property maintenance will be used in the most economical and effective manner by establishing and implementing maintenance management programs. The directive further states that heads of operations offices are to:

--Assure that adequate programs, funding requirements, practices, and plans for property maintenance are established and documented.

--Ensure that contractor maintenance activities are managed and executed in accordance with established programs and practices.

--Review annually contractors' standards, plans, and maintenance performance.

The interim directive basically restates guidance issued in the 1971 Atomic Energy Commission Manual, chapter 5401, Maintenance of Property.

DOE gives little guidance to and places few requirements on contractors

The operating contracts, supplemented by other DOE directives, set forth requirements to be followed by contractors in managing the Government-owned laboratories. With respect to maintenance and repairs, this guidance is limited and few specific requirements are placed on contractors. For example, the operating contract for the Los Alamos National Scientific Laboratory contains only the following clause applicable to maintenance and repairs.

> "Protection of Government Property * * * the University shall take all reasonable precautions, as directed by the Manager, Albuquerque Operations or his authorized alternate, or in the absence of such directions in accordance with sound business practice to safeguard and protect Government property in the University's possession or custody * * *"

The contracts for the other three laboratories contain similar clauses.

DOE's predecessor, the Energy Research and Development Administration, issued a maintenance managers guide in December 1976 for use by organizations responsible for maintenance. The guide suggests several techniques for effective maintenance management, including periodic inspections, formal planning, backlog control, performance measurement and improvement, engineered time standards, and cost identification and control. However, the guide is not directive in nature and states only that the techniques it covers should be seriously considered by organizations not already utilizing them.

As shown on the following page, although each of the four laboratories we reviewed maintained information on annual maintenance and repair expenditures, not all maintained information on annual inspections made of facilities, annual maintenance and repair plans, long-range work plans, and backlogs of deferred work. As a result, the contractors are making only partial use of techniques which are needed to economically and efficiently manage real property maintenance and repairs.

Availability of General Maintenance and Repair Management Information at DOE Operations Offices and Contractors

	Cognizant DOE operations office maintains information on				
	Annual plans	Long-range plans	Annual expenditures	Annual inspections	Backlog of deferred work
Berkeley	Yes	No	Yes	No	No
Los Alamos	No	a/No	Yes	No	No
Sandia	No	No	No	No	No
Argonne	No	No	No	No	No

	Contractor maintains information on				
	Annual plans	Long-range plans	Annual expenditures	Annual inspetions	Backlog of deferred work
Berkeley	Yes	No	Yes	Yes	No
Los Alamos	No	a/No	Yes	No	Yes
Sandia	No	No	Yes	No	No
Argonne	No	No	Yes	No	Yes

a/Not for all facilities.

Limited DOE review of maintenance and repair budgets

The DOE budget is program oriented and maintenance and repairs are not identified or accounted for separately nationwide. Maintenance and repairs are funded as part of a laboratory's overhead. Annual levels of maintenance are determined by contractors with only superficial review by DOE. As a result, DOE has no reliable standard to compare with actual costs incurred by contractors.

Managers of each research program within DOE develop a budget for research they will fund. After review and approval

by the Assistant Secretaries, these budgets are combined into an overall DOE budget request that is submitted to the Congress. Once the overall budget is approved, DOE allocates funds to the laboratories by research program. Contractors then decide, with approval of the cognizant operations office, the annual level of maintenance and repairs. The operations offices' approval of the maintenance and repairs levels is not generally based on an actual determination of what it should cost to economically maintain and repair facilities. Actual maintenance and repair expenses are charged to the various programs funding the laboratory by an overhead application rate generally based on the relative salary costs, square footage of space occupied, or direct costs of each research program.

A laboratory generally budgets for maintenance and repairs by either adjusting the previous year's budget to allow for inflation and any other known changes, or setting a level expressed as a percentage of the total funds it expects to be approved for the laboratory. Neither method is based on an actual determination of need. For example, Los Alamos and Sandia Laboratories develop maintenance and repair budgets based on historical cost plus expected inflation and other perceived requirements. Budgets are projected for the succeeding two fiscal years as well as the current fiscal year and are reviewed and possibly adjusted each quarter to meet changing conditions, such as unusual weather or labor strikes.

A DOE budget examiner in the Office of Management and Budget said that the budget review process is not detailed enough to determine how efficiently contractors use funds for maintenance and repairs. He believed that too little funds were devoted to maintenance and repairs because of a lack of interest in the area by DOE and other needs competed with a limited amount of funds.

DOE does not regularly obtain and analyze maintenance and repair costs to explain wide differences in costs per square foot among laboratories and, in some cases, between years for the same laboratory. For example, Argonne's fiscal year 1980 costs are 89 percent higher than Berkeley's and 26 percent higher than Los Alamos'. Also, Los Alamos' costs increased 131 percent from fiscal years 1975 to 1980, while Sandia's costs increased only 2 percent during that period. We asked the contractor at Los Alamos to explain why costs increased significantly after fiscal year 1975. The contractor said that since 1976, when a new upper management team at the laboratory was installed, more emphasis has been placed on upkeep. However, this was done at the initiative of the contractor rather than DOE.

Although costs will vary due to such factors as local wage prices, weather conditions, and building age, we believe that DOE should obtain and analyze such costs and attempt to explain wide differences among laboratories and yearly changes for each laboratory as a control procedure in appraising contractor performance.

Inadequate DOE monitoring of facility conditions

The large investment in property and large operating budgets should cause DOE to continually monitor the condition of all real property managed by contractors to ensure that Government property is adequately protected from unwarranted deterioration. However, DOE does not do so.

DOE does not have a real property inspection program; consequently, no one knows the physical condition of all DOE facilities. According to DOE officials, operations offices are inadequately staffed to perform periodic inspections.

Operating contracts for the multiprogram laboratories are normally awarded for 5-year periods. Before a contract expires, DOE requires that a review board evaluate the contractor's management and performance and recommend whether the contract be extended or another contractor be sought. We reviewed a July 1979 report regarding the latest review of the Argonne National Laboratory. The DOE review did not address the condition of facilities and if the contractor was adequately protecting Government property. However, even if DOE had reviewed the condition of facilities it would not have been able to determine if facility conditions had declined because no inspection had been made at the beginning of the contract period.

Headquarters officials are aware of this problem but have not taken proper action to correct it. For example, in January 1980, DOE's Director of Administration reviewed a proposed extension to an operating contract for the Grand Junction facility, which is involved in a program to provide reliable estimates of the Nation's uranium resources. He prepared a memorandum to be sent to the Directorate of Procurement and Contracts Management, Director of Contract Business Clearance Division. Among other things, the memorandum stated:

> "Administration (AD) has reviewed the proposed extension * * * and has found several major omissions to the contract language which, if allowed to stand, could have a potentially serious impact on the Department of Energy (DOE) owned and leased facilities at Grand Junction. These specific areas deal with the lack of clear and concise language concerning * * * maintenance management * * *.

"Additionally, little or no mention is made of the requirement for DOE oversight and inspection of the facilities and management techniques to determine contractor compliance with contract provisions. Listed below are the specific requirements which (Administration) feels should be made part of this and all future operating contracts if DOE is to protect its substantial investment in real property * * * The proposed contract language does little to protect and extend the life of the Government's physical plant investment. There is no incentive for the contractor to maintain property beyond a base minimum necessary to sustain day-to-day operations. As the contract stands, (the contractor) is only required to maintain the plant in a "reasonable" condition. "Reasonable" is not defined and without an accurate inventory of current plant condition nor a means to assess this condition on an annual basis, there is no method of gauging the contractor's performance in this area. The language should be revised to include the following provisions: 1. An accurate count and description of all buildings, utilities, roads and other structures covered by the contract as well as an estimate of their current replacement value, and a survey of their physical condition at the start of the contract shall be made. 2. An annual technical evaluation and inspection of these facilities to determine the performance of the contractor in maintaining the plant shall be performed. Such evaluation and inspections shall be performed by DOE staff and the results periodically reviewed by cognizant DOE Headquarters audit groups. 3. The contractor shall be required to expend no less than a specific minimum on the maintenance and repair of the existing facilities to be based on a percentage of the current replacement value of the overall site facilities. Such percentage shall be agreed upon prior to start of contract and shall be no less than amounts currently expended on comparable private and Government facilities."

We contacted the Contract Business Clearance Division in October 1980 and asked if the suggested changes had been made to the contract. An official stated that the division had never received the memorandum; therefore, the changes had not been considered. We contacted the official again in December 1980 and he told us that the memorandum had never officially been sent, but that he was aware of the contents and the suggested

changes would be considered in future operating contract extensions.

DOE is not evaluating the effectiveness of contractors' programs

DOE does not have a system to check contractors' performance of maintenance and repair work and appraise the results being achieved. Without such a system, it does not know where corrective action should be taken to improve efficiency, economy, and effectiveness.

We believe that to properly evaluate contractor performance, DOE should, as a minimum, review contractors' plans, periodically inspect facilities, analyze costs and expenditures, and review the backlog of deferred work at each installation annually. However, these functions are rarely done because DOE operations offices do not have adequate procedures and records.

Headquarters officials also do not have or review information concerning maintenance and repair plans, expenditures, inspections, or backlog of deferred work. They stated that some of this information could be obtained by requesting it from contractors, but this is not regularly done.

The operating contracts for Los Alamos National Scientific Laboratory and Sandia National Laboratories require the contractors to prepare annual work plans. However, neither DOE nor the contractor was able to locate such a plan for Los Alamos. DOE did have a plan for Sandia but it did not address maintenance and repairs.

In 1980 DOE established an institutional planning process to assist it in placing work at the multiprogram laboratories, conducting institutional long range planning, and ensuring that the laboratories' plans are consistent with DOE policy and programs. The process is documented by a 5-year plan, updated annually, which is approved by DOE. Other than to sometimes discuss substandard facilities to be replaced in the future, the institutional plans for the four laboratories we reviewed did not address 5-year maintenance and repair needs.

DOE operations offices conduct periodic procurement system reviews of each contractor, the reports of which are available for review by headquarters. However, little attention is paid to maintenance and repair work in these reviews. According to headquarters officials, operations offices make no other reports or evaluations regarding contractors' maintenance and repair work.

We found only one instance at the four laboratories where an operations office made any other type of formal contractor performance evaluation regarding maintenance and repairs. This was at Los Alamos, where DOE has subcontracted for almost all maintenance and repair work. Every 6 months DOE reviews the subcontractor's performance to determine the allowed fee. The review is intended to motivate the subcontractor to manage maintenance and repairs more efficiently. However, DOE does not recommend specific corrective action to be taken. Rather, the review is intended to cause the contractor to improve its performance in order to earn a larger fee.

Headquarters has not made any internal audits regarding maintenance and repair activities in recent years. However, one audit has been made in the past 3 years by an operations office at the four laboratories we reviewed. The audit was made in 1979 by the San Francisco operations office, which audited maintenance activities at the Lawrence Berkeley Laboratory. The audit covered the contractor's work measurement and preventive maintenance systems.

The primary headquarters official responsible for facility management has visited only a few laboratories in the past 2 years to evaluate existing facilities management programs.

SOME LABORATORY FACILITIES ARE BADLY DETERIORATED

Some multiprogram laboratory facilities are in obvious need of repair. DOE management is aware of this and has estimates of what it will cost to correct some deteriorated facilities. However, it does not know the true condition of all facilities and has relied on studies by consultants and other surveys to identify requirements rather than its operations offices.

Facility conditions vary among laboratories

The physical condition of facilities at the laboratories varies greatly. In our opinion, the variations among laboratories reflect primarily the extent of attention that laboratory management places on the relative importance of maintenance and repair needs to other needs.

The buildings at the four laboratories reviewed showed no obvious signs of widespread deterioration with the exception of the Argonne National Laboratory. At Argonne, many buildings--both permanent and temporary--did not appear to be well maintained. We observed numerous windows in need of painting and many roofs were blistered and cracked. One building had strips of wood nailed to the sides in order to hold them together.

According to headquarters officials, DOE installations used for the defense programs are better maintained than the others. They attribute this to contractors, with the approval of DOE program offices, not devoting enough funds to facilities. One official stated that the civilian program offices, in providing funds to the non-defense laboratories, want their funds devoted directly to research and development rather than to facilities. If a laboratory requests that funds be used for upgrading, the office has the option of moving its research work to another laboratory. Consequently, maintenance and repairs are often neglected. This official stated that the Argonne National Laboratory is a prime example of where program concerns override upkeep concerns. According to headquarters officials, the laboratories in Richland, Washington, and Idaho Falls, Idaho, also have poorly maintained facilities.

Because DOE does not have inspection reports for all facilities and we visited only four laboratories, we cannot comment on the condition of all multiprogram laboratories. However, a headquarters official responsible for facilities management has reviewed maintenance at three contractor-operated installations--the Idaho Falls National Engineering Laboratory, the Rocky Flats Plant, and the Sandia Laboratory in Livermore, California--in the past 2 years. The official rated these facilities' conditions as "fair to good." The official made the following comments regarding conditions at two of the laboratories visited.

Idaho Falls National Engineering Laboratory

"When comparing specific areas, the conditions varied greatly * * * In general, the more program specific an area is, the better the overall conditions are and conversely, the more multiprogrammatic an area is, the less likely facilities are to be in good condition. Facilities in multi-program support areas have a tendency to be older, less suited for their end use and generally less well maintained in the long run * * * Except where facilities were constructed poorly in the first place, most long-term serious problems have not yet come up. However, the potential for serious problems is high * * * any lessening of the maintenance program coupled with an increased tempo of operations, could result in a severe backlog of maintenance deficiencies * * *."

Sandia, Livermore

"Utility systems are old and in need of replacement * * * there are fourteen trailer complexes

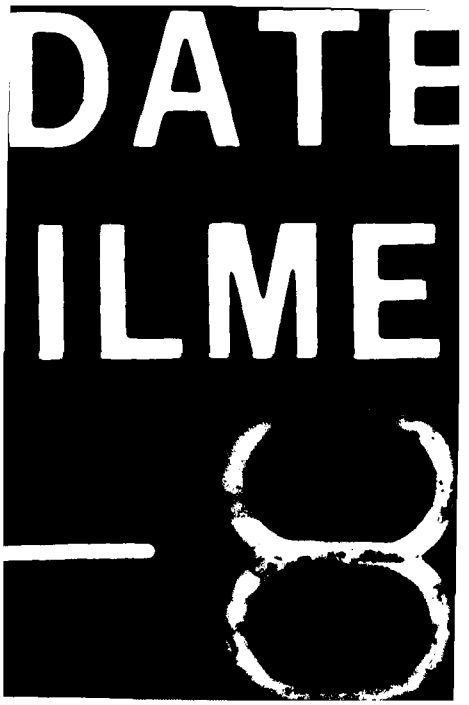
totaling in excess of 23,000 square feet * * *
Some of these facilities are in poor condition * * *."

DOE studies show
widespread deterioration

In 1979, and again in 1980, DOE headquarters contracted with an architect-engineering firm to assess the adequacy of the multiprogram laboratories' general purpose facilities. For purposes of the studies, general purpose facilities were defined as all facilities not of a special designed programmatic nature, such as reactors, accelerators, geothermal wells, solar towers, and special nuclear material processing buildings. The consultant inventoried all general purpose facilities, identified those that were inadequate, and developed proposed corrective measures to assure the long-term sufficiency of the general purpose physical plant to meet current mission requirements. The criteria for inadequacy included deficiencies in capacity, condition, inappropriate location, and noncompliance with applicable regulations.

The latest study showed a dollar deficiency total backlog, in fiscal year 1982 dollars, of about $2.3 billion. Of this, $0.5 billion was for rehabilitation, or to repair deterioration, and $1.8 billion was for replacement. A headquarters official stated that deterioration was caused by inadequate maintenance and repairs, the old age of buildings, buildings not being used for what they were designed for, and adverse environmental factors, such as the effects of an extremely harsh winter.

The consultant also reported that about 17.7 million square feet of building space was inadequate. Of this space, about 4 million square feet should be replaced and the remainder should be rehabilitated. According to the consultant, the rehabilitation requirements, which were about 54 percent of the total inventory, were quite high and were a reflection on the past maintenance program. A headquarters official said this meant if maintenance had been done properly in the past this work would not be needed. This official also stated that since structures should have a 40 to 50 year useful life, annual replacement needs should be from 2 to 2-1/2 percent of the plant replacement value. He said further that the current replacement value of about $9 billion for general purpose facilities indicates that the $2 billion of deficiencies (or 22 percent) are excessive and needs have been neglected.


DATE
ILME